

CLAIMS

1. An air drying waterborne resin composition comprising at least one amphiphilic air drying dendritic polymer, at least one non-amphiphilic air drying resin, at least one drier initiating and/or promoting autoxidation, water and optionally at least one anionic and/or nonionic surfactant and/or at least one coalescent agent
characterised in, that said at least one amphiphilic air drying dendritic polymer is built up from a polyhydric dendritic core polymer having at least 4 terminal hydroxyl groups and thus a hydroxyl functionality (f) of at least 4, such as 8, 16 or 32, and at least one unsaturated carboxylic acid bonded to at least one and at most $f-1$ said terminal hydroxyl group(s) and at least one adduct, obtainable by addition of at least one monoalkylated polyethylene glycol to at least one dicarboxylic acid or at least one corresponding anhydride and/or at least one diisocyanate, bonded to at least one and at most $f-1$ said terminal hydroxyl group(s), and that said at least one non-amphiphilic air drying resin is a short, medium or long oil air drying alkyd.
2. An air drying waterborne resin composition according to Claim 1
characterised in, that said polyhydric dendritic core polymer is obtainable by addition of at least one di, tri or polyhydric monocarboxylic acid to a di, tri or polyhydric core molecule at a molar ratio yielding a polyhydric dendritic polymer comprising a core molecule and at least one branching generation bonded to said di, tri or polyhydric core molecule.
3. An air drying waterborne resin composition according to Claim 1
characterised in, that said polyhydric core dendritic polymer is obtainable by ring opening addition of at least one oxetane of a di, tri or polyhydric compound to a di, tri or polyhydric core molecule at a molar ratio yielding a polyhydric dendritic polymer comprising a core molecule and at least one branching generation bonded to said di, tri or polyhydric core molecule.
4. An air drying waterborne resin composition according to any of the Claims 1-3
characterised in, that said at least one monoalkylated polyethylene glycol has a molecular weight of at least 500, such as 500-2500 or 700-1500.
5. An air drying waterborne resin composition according to any of the Claims 1-4
characterised in, that said at least one monoalkylated polyethylene glycol is a monomethylated polyethylene glycol.
6. An air drying waterborne resin composition according to any of the Claims 1-5
characterised in, that said at least one dicarboxylic acid or anhydride is at least

one linear or branched aliphatic, cycloaliphatic or aromatic dicarboxylic acid or anhydride, such as adipic acid, azelaic acid, fumaric acid, maleic anhydride, phthalic acid or anhydride, isophthalic acid, tetrahydrophthalic anhydride, hexahydrophthalic anhydride, succinic acid or anhydride and/or sebacic acid.

7. An air drying waterborne resin composition according to any of the Claims 1-6 characterised in, that said at least one unsaturated carboxylic acid is an aliphatic linear or branched fatty acid having 8-24 carbon atoms in its main carbon chain.
8. An air drying waterborne resin composition according to any of the Claims 1-7 characterised in, that said at least one unsaturated carboxylic acid is tall oil fatty acid, soybean fatty acid, safflower fatty acid, sunflower fatty acid, cottonseed fatty acid, castor fatty acid, oleic acid, linoleic acid and/or linolenic acid.
9. An air drying waterborne resin composition according to any of the Claims 1-8 characterised in, a weight ratio said air drying dendritic polymer to said air drying alkyd of between 1:99 and 99:1, such as 50:50, 10:90, 20:80, 70:30, 90:10, 80:20 or 70:30.
10. An air drying waterborne resin composition according to any of the Claims 1-10 characterised in, that said at least one drier is at least one metal drier, such as a Pb, Zr, Co, Li, K, Mn or Mg drier or a combination thereof or therewith.
11. An air drying waterborne resin composition according to any of the Claims 1-10 characterised in, that said at least one metal drier is present in an amount of 0.01-0.3%, preferably 0.05-0.1%, calculated as metal on solid resins.
12. An air drying waterborne resin composition according to any of the Claims 1-11 characterised in, that said optional at least one surfactant is present in an amount of 1-15%, such as 2-10%, by weight calculated on solid resins.
13. A method of producing an air drying waterborne resin composition according to any of the Claims 1-12 characterised in, that said method comprises
 - i) mixing of said at least one air drying dendritic polymer, said at least one air drying alkyd and optionally at least one coalescent agent at 40-80°C, such as 50-70°C or 50-60°C, until a homogenous mixture is obtained,
 - ii) adding and admixing said at least one drier and optionally said at least one surfactant and/or other additives,
 - iii) mixing said ingredients at 40-80°C, such as 50-70°C or 50-60°C, during 10-60 minutes, such as 20-40 or 20-30 minutes, and

- iv) adding, slowly under vigorous stirring, warm, such as 40-80°C, 50-70°C or 50-60°C, water to requested final solid content and/or viscosity.
- 14. A method according to Claim 13 characterised in, that a neutralising agent, such as an amine or ammonia, is added to neutralise residual acid groups in said air drying alkyd and/or said air drying dendritic polymer.
- 15. Use of an amphiphilic air drying dendritic polymer according to any of the Claims 1-9 as water dispersing resin for a non-amphiphilic air drying resin, such as a short, medium and long oil alkyd.
- 16. Use of an amphiphilic air drying dendritic polymer according to any of the Claims 1-9 as dispersing resin for pigments and/or fillers.